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ABSTRACT

This paper describes a new and innovative approach to school improvement called Knowledge Work Supervision (KWS). KWS draws on individual and team-based knowledge work; uses school-community strategic planning methods; encourages participative work redesign; and redesigns knowledge work, social architecture, and environmental relationships. KWS offers a systemic way to examine and simultaneously improve three sets of critical variables affecting the overall performance of school districts: work processes, social architecture, and environmental relations. The principles of organizational design--the bureaucratic organization and the democratic self-managing organization--and the effects of each of these principles on a school system are outlined. The nature of knowledge work in school systems--how it is nonlinear and primarily manifested in classroom teaching--is described. The text stresses the importance of team-based knowledge work and how such an approach can improve entire school systems. It also emphasizes the uniqueness of each district and presents two ways in which to align a school system with the needs and expectations of its environment. Two tables and three figures further explain design principles and KWS. (Contains 35 references.) (RJM)

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Designing High Performing Learning Communities

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Designing High Performing Learning Communities

> "In *A Woman of the Future*, Australian novelist David Freland described a character whose 'past was before him like a beacon; he would keep going in that direction and call it the future.' To be in control, to master change, to be a supermanager in a time of rapid, turbulent, and confusing change, you must fall away from a past that prevents you from seeing the potential ahead."
>
> ---Arnold Brown and Edith Weiner (Safire & Safir, 1990, p. 95)

With school improvement, sometimes it seems no matter how much we do it's just not enough. One reason for this experience is that we sometimes confuse "busy-ness" with "effective-ness." We think just because we are busy doing things in the name of school improvement that somehow, someway schools will improve. As we know from the literature on school improvement, this is often not the case.

Sometimes it seems advocates of school improvement forget about students. It seems like the goals of school improvement focus on everything but student learning. On the other hand, sometimes it seems that the same people who want school improvement to focus only on student learning forget that if it weren't for the organization called a school district and the adults who work in that organization, student learning wouldn't happen. School improvement needs to focus both on student learning and on organization improvement—it is not an either/or proposition.

Looking at school improvement in retrospect it seems that change has been piecemeal and that the systemic nature of schooling is disregarded (although many influential educators have called for systemic change; e.g., Sarason (1995) and Fullan (1994). The lack of a systemic focus on school

improvement is also reflected in the blind dedication to the principle of the individual school as the ideal unit of change--a principle first put forth by John Goodlad in the 1980s. The dedication to this principle persists even though there is no evidence suggesting that school-based approaches to school improvement work (e.g., see Mohrman, Wohlstetter, & Associates, 1994). In fact, some researchers suggest that effective school-based management cannot happen unless the entire system is "reformed" (Hill, Bonan & Warner, 1992).

When it comes to school improvement, it seems like the past before us is not the future.

This paper describes a new and innovative approach to school improvement. This new approach is called Knowledge Work Supervision (KWS). We start our presentation of KWS by talking about the need for a new paradigm of school improvement. Then we lay out basic principles of systemic organizational improvement. We continue with a discussion of knowledge work and how it is manifested in school systems. Finally, we present the paradigm of Knowledge Work Supervision that serves as a bridge from the past to the future.

Why A New Paradigm of School Improvement?

When you read the literature on school improvement, you find many reasons why schools need improving. In the same literature, you also find many prescribed improvement outcomes. Experts are advising practitioners to move to outcomes-based education, extend their school years, extend their school days, move to ninety-minute block periods, and so on. Not one of these prescriptions is based on a careful assessment of <u>each</u> school district's strengths and weaknesses. Each one is a blanket prescription -- a kind of a one-pill-cures-all-approach -- being sold as the latest cure for what ails education. In the same literature that tells practitioners <u>why</u> their school districts need improving and which prescribes <u>what</u> the outcomes of school improvement should

be there is almost nothing about how to redesign their school districts for high-performance based on a careful assessment of their districts' characteristics.

Building on the work of organization improvement experts from several interrelated areas (listed below), a new paradigm of strategic school improvement is proposed for the purpose of improving the overall performance levels of entire school districts. It is Knowledge Work Supervision.

Knowledge Work Supervision shows educators "how" to redesign their school systems for high-performance. Knowledge Work Supervision is not another prescribed improvement outcome. It is a bridge that transports schools systems from the past, through the present, and into the future.

Knowledge Work Supervision is born of the literature and successful practices of several interrelated areas: socio-technical systems design (e.g., Pasmore, 1988, 1992; Pasmore, Francis, & Haldeman, 1982; Trist, Higgin, Murray, & Pollack, 1965; Lytle, 1991; Trist, 1969; Hanna, 1988); knowledge work (e.g., Drucker, 1985, 1993, 1995; Pava, 1983; Knights, Murray, & Willmott, 1993); quality improvement (e.g., Deming, 1982; Crosby, 1979, Taguchi & Clausing, 1990; Juran, 1989; Ishikawa, 1985); Search Conferencing and Participative Design Workshops (Emery & Purser, 1995) and organization development (e.g., Argyris & Schön, 1978; Burke, 1982; Senge, 1990a, 1990b).

The field contributing the most to the core of Knowledge Work Supervision is socio-technical systems (STS) design. According to STS design, organizations are complete systems with components that interact and which exist within a broader environment. The system functions by "converting" "inputs" into "outputs." Inputs are human, financial, and technical resources used to do work inside the organization that results in products or services being delivered to a customer.

"Feedback" (i.e., an evaluation of the quality and timeliness of a product or service) is provided to managers and employees so they can improve what they are doing.

Important thinking on socio-technical systems design comes from Fred and Merrilyn Emery. They described in great detail two basic principles that capture the essential characteristics of organizational design. The first is called Design Principle 1 (DP1) and the second is called Design Principle 2 (DP2).

Two Principles of Organizational Design

Redesigning an entire system is a complex and time-consuming process. Innovation is usually circuitous and non-continuous. It moves in strange and varied ways. Just when it seems the entire change process is moving smoothly and each group of stakeholders is getting on-board with the innovation, something happens that requires just the right actions to avoid a downward spiral. At this moment, it is important to remember two guiding principles underlying organizational design and, then, use these guiding principles to get the change process back on track.

Despite the huge variety of work systems in our daily life (schools, hospitals, government agencies, and so on), all these systems are designed in accordance with only two basic "design principles" (Emery, 1977): Design Principle #1 (DP1), the "bureaucratic" organization (depicted in Figure 1) or Design Principle #2 (DP2), the "democratic, self-managing" organization (depicted in Figure 2). DP1 represents the vast majority of organizations in the world. Indeed, top-down bureaucratic organizations are so much a part of our lives that we rarely conceive of an alternative design.

----Insert Figure 1 and Figure 2 about here-----

As long as the environment remains relatively constant and adaptation to it is not required of

the system, bureaucracies survive relatively well. However, organizations designed in accordance with DP1 principles possess little resiliency or ability to adapt to changing environmental conditions. More importantly for school systems, the inherent competitiveness produced under the DP1 organizational design does not reward honesty, teamwork, or flexibility among its members. Other effects of DP1 are summarized below.

Effects of Design Principle #1

- Communication across functions is rare because workers only focus on their areas.
- Workers mostly provide information that makes them look good.
- It is in no one's interest to provide accurate or timely feedback.
- Competitive structure emerges--person against person, group against group.
- Workers feel divested from the outcome of their work, are only aware of and rewarded for a small piece of the product; and, therefore, they have little commitment to product quality.
- Informal "shadow" groups or cliques form to meet worker needs for control, belonging and self worth.

The future of education within our society lies in its ability to generate honest dialogue, promote teamwork within its diverse workforce, and productively adapt under rapidly changing conditions. The DP1, bureaucratic design does not allow this to happen.

School improvement influenced by the bureaucratic Design Principle 1 is flawed because innovators institute more of the same bureaucracy when what is needed is a new organizational design based on Design Principle 2 (democratic, self-managing). Common and fundamental flaws of past school improvement efforts in school systems (top-down problem-solving, using outside

consultants to analyze the system and prescribe improvements, and narrow redesigns that are site-based rather than K – 12 cluster-based) are direct consequences of applying the bureaucratic design principles. DP1 is ill-adapted and ill-advised in systems such as schools which require rapid responses to environmental changes, flexibility in implementing changes, a high degree of ownership for results, and methods which can be replicated internally without relying solely on costly external experts.

The democratic, self-managing organization (DP2), on the other hand, promotes many of the organizational strengths needed by today's school systems and uses the skills of knowledge workers who make schooling successful. The impact of DP2 is summarized below.

Effects of Design Principle #2

- There is mutual support and respect among team members.
- Communication and feedback among team members is direct and timely.
- Workers learn and develop across functions; variety is increased as workers share functions.
- Workers set their own goals in the context of system requirements.
- Each worker takes responsibility for the whole product.
- Workers are invested in the outcome of the product; they have a sense of working together to produce the whole, and are therefore committed to production quality.

Additional comparisons between Design Principle 1 and Design Principle 2 are shown in Table 1.

---Insert Table 1 about here---

The Nature of Knowledge Work in School Systems

A concept contributing significantly to Knowledge Work Supervision is knowledge work (e.g., Drucker, 1985). Knowledge work is the thinking process inside a professional's head that is used to do his or her job. The tools of knowledge work are the brains and the knowledge of the knowledge worker. Although traditional workers use their brains to think about and do their work, their primary work is to make "things." Knowledge workers' primary work is to make metaphors, concepts, and analogies, see relationships, and use all of these cognitive constructs to produce new knowledge or to deliver a new product or service to others. Knowledge work includes engineering design work, consulting work, computer software design work, and teaching.

Knowledge work is nonlinear in nature. Nonlinear work consists of activities that can be done in parallel, separated from each other, or in a variety of sequences. Although knowledge work has well-defined beginning and ending points, the path from beginning to end is circuitous and nonlinear. Consequently, we often experience nonlinear work as chaotic.

Knowledge work in school systems is primarily manifested as classroom teaching. An example of individual knowledge work in schools is the pattern of decisions made by a teacher while teaching. For example,

> *The teacher enters the room with a nice lesson plan, goals, and objectives. Everything is planned in a linear way. But, when he starts teaching, his mind races. He has learning objectives in mind—he knows where he wants to lead the students. While teaching, brand new examples of the points he is trying to make pop into his head. Students ask questions that take him off course temporarily. He returns to his original direction when a five-year old story reinforcing his objectives comes to mind. He tells it. It makes the point. He makes*

a transition to a planned activity. It's not working. He scraps it and invents a new activity on the spot. It works. He looks at the clock and realizes he must bring the lesson to a close. Before closing he makes one last point triggered by a student's question during the first minute of class--a full eighty-five minutes earlier.

Kind of non-linear, isn't it? There is no research evidence suggesting that this kind of knowledge work can be improved using traditional supervisory methods.

In the case of teachers, knowledge work also consists of taking a supposedly "fixed" linear instructional program (with its required curricula, grade-level lesson plans and so on) and adjusting it to an infinite variety of real classroom situations. Intervening variables and group variances make it impossible for teachers to stick rigidly to a set lesson plan and still do the job right. Knowledge work in schools is characterized by the ability to make necessary unplanned adjustments for individual students in varied situations and still teach the required subject-matter well. For each teacher, this ability can be called individual knowledge work. Non-linear, individual knowledge work is what makes it possible for teachers to comply with the requirements of the linear, K-12 instructional program in today's school systems.

Work processes that are linear and sequential support knowledge work. A linear work process is a sequence of steps that must be followed so that step one is completed before beginning step two, and so on. This process is ". . . the total collection of processes, procedures, instructions, techniques, tools, equipment, machines, and physical space used to transform the organization's inputs into the desired outputs (products or services). 'X' is transformed into 'Y' by doing 'Z' " (Lytle, 1991).

In a school district, the supportive linear work process is the instructional program, kindergarten through twelfth grade within which students must complete first grade before moving into second grade, and so on. Resources (inputs) are poured into the instructional program with the intention of providing students with a high quality education that prepares them to be productive citizens (desired outputs).

Practitioners improve the linear instructional program by auditing that work process to identify where mistakes are made, or where potential for mistakes exists. Then, actions are taken to correct the mistakes or to eliminate the possibility of making them.

Improving nonlinear knowledge work in schools, on the other hand, requires different actions. Remember that knowledge work in school districts occurs primarily inside the heads of teachers and it is manifested in their classroom teaching. Remember, too, Drucker's (1995) characterization of knowledge work: ". . . knowledge workers own the tools of production. . . . Increasingly, the true investment in the knowledge society is not in machines and tools. It is in the knowledge of knowledge workers" (p. 246). The broad actions needed to improve knowledge work are (adapted from Pava, 1983):

- Improve the quality and timeliness of key information and knowledge teachers need to teach effectively.
- Assure that teachers have access to key people with whom they should be exchanging critical information and knowledge.
- Provide teachers and key people with a variety of structured, semi-structured, and informal forums for exchanging information and knowledge (e.g., in structured workshops, informal "brown bag" lunches, or national conferences).

- Examine and improve any devices (e.g., computer systems), work procedures (e.g., lesson planning), and organizational functions (e.g., administration and supervision) intended to support teaching.

Classroom teaching (individual knowledge work) is intertwined with the K-12 instructional program (the supporting work process) to create a core knowledge work process in school systems. Although the core knowledge work process is primarily used by teachers working in isolation, sometimes this process requires teams of teachers working together.

Team-Based Knowledge Work

School systems of the future will increasingly require teachers to work effectively in teams in addition to their traditional role as individual knowledge workers. These "knowledge work teams" require more than just sharing information. The new reality for school systems dictates that there are many situations requiring teachers to form cohesive, collaborative knowledge work teams to effectively meet educational needs. No longer will teachers be able to view successful teaching as a solely classroom-centered, individual activity. Examples of the need for team-based knowledge work have been around for decades and include Multi-Disciplinary Teams, Student Assistance Teams, and School Improvement Teams. The need for this kind of teamwork will increase as school systems strive to make systemic improvements.

Improving Entire School Systems

Current and past school improvement methods seem not produce true systemic change--they only tinker with pieces of the system and they often do not view school improvement from a K-12 perspective. The way to improve an entire system is to examine and improve simultaneously three sets of key organizational variables that impact the quality and timeliness of the final product or

service. These sets of variables are: the knowledge work process, the social "architecture" of the system, and the system's relationship with its environment.

In school systems, the knowledge work process is composed of non-linear classroom teaching and the linear K-12 instructional program. The social "architecture" is composed of communication structures, the reward system, critical job skills, required roles and responsibilities, conditions that motivate, organizational culture, and organizational design. A school system's environment is complex and includes the community, customers (parents of school-aged children), suppliers, the government, the profession of education, and competitors (private schools and other public schools). To achieve effective systemic innovation, improvements in these three areas must be made simultaneously. This principle of simultaneous improvement is called "joint optimization."

Achieving Joint Optimization

A first step in improving the ability of a school system to produce the "output" called "educated students who are capable of being productive citizens" is to align the school system with the needs and expectations of its environment. Once the current and emerging educational needs of the system's environment are identified, then the work done within the system and the social architecture which supports that work can be aligned with those larger environmental purposes. This two-step process of environmental "scanning" followed by on-going system redesign to meet environmental needs and expectations results in a seamless process of joint optimization. "Healthy" systems use joint optimization to actively adapt to changing environmental needs. Such systems are good for the people within them and they have a future (Emery, 1995).

Among the large group processes proven most useful for joint optimization are the Search Conference and the Participative Design Workshop (Emery & Purser, 1995). Together, these

methods allow a system such as a school district to sense changes in its environment and actively adapt its operations to best meet current needs, as well as anticipate future goals. These two methods were adopted as core methods for Knowledge Work Supervision.

The Search Conference

A Search Conference provides a reliable means to help school systems adapt to their environments. Because each school system and community is unique, Search Conferences cannot be designed with a "cookie cutter" mentality. Each conference is designed to create the best fit between a school system and its environment.

There are three essential elements in the creation of a successful Search Conference. The first element is the Design Phase which uses the skills of a small group (ideally, 5-10 key people to identify the purpose, objectives, participants, and other vital elements for the conference. The second element is the Search Conference itself, which is an intense, highly structured large group (ideally, 20-40 key people selected from throughout the "system" and its environment using a "deep and wide slice" sampling technique). The Search Conference is spread over three consecutive days. The third element is the Follow-Up Phase which ensures that redesign criteria developed during the conference are implemented. These criteria are used to redesign the school system's knowledge work process, social architecture, and environmental relationships to meet needs and expectations identified during the Search Conference.

Search Conferences are carefully structured to produce the best possible results from a very diverse group of key people. Getting the right mix of people together for the entire conference requires extensive planning and preparation. The "right" mix includes those people with information and influence relevant to the topic of K-12 school improvement. Additionally, the conference

includes people needed to implement the design criteria, as well as any people who could block implementation if not invited.

Years of experience with Search Conferencing suggests that the following results are reliably produced by a well-planned and executed Search Conference:

- Creative and achievable strategies for change
- Collaborative and participative approaches to change
- Consensus generation
- Shared values
- Commitment to strategies that are formulated
- The integration of cultural, regional, or value differences
- The completion of redesign tasks in two or three days (and sometimes evenings) that would take months if left to specialized analysts and experts

Participative Design Workshops

Once the Search Conference process is completed the results are used to define a set of essential performance criteria for redesigning the entire system (these criteria are generally called **minimum critical specifications**). These specifications outline how the system should perform to best meet its strategic vision, mission, and goals.

The minimum critical specifications are then handed-off to the people who actually do the core work of the system (teachers and building-level administrators inside K-12 clusters of schools) and they redesign their own workgroups in a way that satisfies the minimal critical specifications. A series of one or two-day Participative Design Workshops is provided for everyone to accomplish this redesign task. These workshops can be completed in a number of different ways. The key design

philosophy underlying the Participative Design Workshops is that the entire process follows the principles of democratic, self-managing systems (Design Principle 2, described earlier).

The biggest threat to effective participative design is called "mixed mode" operation. Mixed mode operation is a situation where senior managers say that organizational redesign is going to be a democratic process, but then they mandate or manipulate to get what they think is the best design. The obvious and predictable result is an immediate resistance to the mandate or manipulation. This situation quickly turns to disillusionment among teachers and building-level administrators (which, incidentally, unifies them into a formidable force working against change--Oshry, 1997), reinforces any previous suspicions they may have had about the moral character of the top-administration, and convinces practitioners that this was all just one more attempt to involve them in some phony empowerment sham. For effective participative design to happen, top leaders must totally understand and be totally committed to transforming their school systems into democratic, self-managing systems. Generally, this involves much more time and "education" of top leaders than is expected at the onset of the process.

Faulty Redesign Premises

Most approaches to redesigning traditional, linear work processes and social architecture in organizations are based upon faulty premises that make theses approaches ill-suited for redesigning school systems. These faulty premises are:

- Premise 1: The best way to design, supervise, and evaluate work is top-down. Specifically, the role of the manager is to watch over the assets of the organization and assure that goals are met. This top-down approach is a by-product of the factory model, generated in the early industrial age when specialization, piecework and assembly-line processes were the road to

efficiency. The obvious drawback with this top-down philosophy for redesigning school systems is that it assumes that supervisors and administrators know the job of teachers better than the teachers themselves. A top-down organizational redesign is impractical and wastes the talent of the "experts" who work directly with real students in real classrooms--the teachers themselves. The only truly effective way to redesign school systems is to use a shared approach to change that engages teachers and administrators in a collaborative dialogue on how to improve their school systems. In this collaborative approach to school improvement, the role of administrators needs to be redefined as supporter of, rather than controller over, teachers and other professional staff. The principles of leadership as stewardship, service, and transformation need to be applied. The role of teachers needs to be redefined as being a semi-autonomous knowledge worker who is a stakeholder in the outcomes of schooling.

- Premise 2: Workplace redesign requires outside experts to collect voluminous data about the system, refine and classify the data, scientifically analyze the work to be done within the system, identify the manpower needs to do the job well, and, using extensive, time-consuming job analysis processes, determine the best redesign ideas. Then, they proudly announce the results of their analysis and present prescribed recommendations for the redesigned system. Within education, this type of time-consuming expert-driven analysis simply does not meet the needs of our "turbulent" society (Emery & Trist, 1972), nor does it meet the needs of school systems that must rapidly adjust to changing societal conditions. By the time a "professional" report is compiled and published it describes a situation that no longer exists and proposes solutions which no longer fit.

- Premise 3: Redesign plans must be "site-specific" and reflect the unique needs of each school building. This premise holds that each individual school is the best and most appropriate building-block for educational redesign and reform. The problem with this approach is that it builds upon and rewards isolated pockets of excellence within a school system. The site-based approach to redesign also tends to splinter the continuity of the K-12 learning experience. Research clearly shows that site-based management "... requires a redesign of the whole school organization rather than a change in school governance. SBM (school-based management) fails when it is adapted as an end in itself, principals work from their own agenda, decision-making power is centered in a single council, and business continues as usual (Wohlstetter & Mohrman, 1996).

These faulty premises about organizational redesign get to the very core of assumptions about the characteristics of "best" schools, who should design them, and how long it should take. The redesign premises for Knowledge Work Supervision are different.

Redesign Premises Underpinning Knowledge Work Supervision

- Premise 1: To avoid the trap of top-down redesign, school systems require a process that respects the ability of teachers and building administrators (within K-12 feeder-clusters) to take responsibility for deciding collaboratively how they can best perform the knowledge work for which they were hired and which gives them the tools for fine-tuning the new designs over time. Specifically, once a Search Conference identifies the strategic direction for an entire school system, it is up to the teachers and school-based administrators to create the knowledge work process and social architecture to help their K-12 feeder-clusters, and the individual schools within these clusters, to move toward that strategic direction.

- Premise 2: To avoid creating solutions that no longer address current conditions, the redesign process must provide rapid, ongoing joint optimization of the knowledge work process, social architecture, and environmental relationships.
- Premise 3: To provide seamless continuity of K-12 schooling, communication linkages between and among levels of schooling (elementary, middle, and secondary) and individual schools within each K-12 feeder cluster need to be established and maintained. Further, the redesign process must provide educators with skills for both improving the quality of individual knowledge work, while insuring effective team-based knowledge work.

Meeting all of these methodological criteria is far from easy, but it is possible. The way to satisfy all these criteria and to accomplish everything laid out so far in this article is found in a new paradigm for strategic school improvement called Knowledge Work Supervision. The essential characteristics of this paradigm are described below.

Knowledge Work Supervision—a Bridge to the Future

Taken separately, the notions of valuing individual and team-based knowledge work; using school-community strategic planning methods; encouraging participative work redesign; redesigning knowledge work, social architecture, and environmental relationships; and applying the other processes described above are not new. They represent desirable and valuable methods to be sure, but they are not groundbreaking, paradigm-shifting departures from what has been tried for many years. What is groundbreaking is that all these methods have been combined for the first time into a single, comprehensive, systemic, systematic, and strategic school improvement process. This process is called Knowledge Work Supervision.

Knowledge Work Supervision

Knowledge Work Supervision provides a comprehensive, systematic, systemic, and strategic model for transforming entire school systems into high performing learning organizations. The structure of the paradigm of Knowledge Work Supervision is shown in Figure 3.

---Insert Figure 3 about here---

While traditional supervision focuses on the behavior of individual teachers, Knowledge Work Supervision focuses on the whole system. While traditional supervision examines the classroom behavior of individual teachers, Knowledge Work Supervision examines and improves three sets of key school system variables: knowledge work process, social architecture, and environmental relations. Further distinctions between traditional supervision and Knowledge Work Supervision are shown in Table 2.

---Insert Table 2 about here---

The paradigm of Knowledge Work Supervision has four phases, each with multiple steps. These phases and steps are described below.

Phases of Knowledge Work Supervision

Phase I: Developing Support for Innovation

During this phase, the top leaders prepare to redesign the school system. They develop "political" support for innovation. They form a Strategic Leadership Team composed of influential administrators and teachers and perhaps some parents. This team provides strategic leadership for school improvement. A Knowledge Work Coordinator is appointed or hired to provide tactical leadership for school improvement. A cluster of K-12 schools is identified to begin the process. A team of educators from within the cluster is chartered and trained as a Cluster Improvement Team

that will produce innovative ideas for redesigning their cluster. Site-Improvement Teams are established and trained for each individual school within the K-12 cluster targeted to begin Knowledge Work Supervision. A system-wide Search Conference is planned and conducted during this phase that results in a well-defined strategic direction for the school system.

Phase II: Redesigning for High-Performance

At the end of Phase I, the redesign process is handed-off to the Cluster Improvement Team for the first K-12 cluster to begin Knowledge Work Supervision. This team employs a series of Participative Design Workshops to create innovative ideas for redesigning the cluster's knowledge work process, social architecture, and environmental relationships. The Participative Design Workshops involve teachers and building-level administrators from within the K – 12 cluster. The redesign ideas that come out of these workshops are crafted into a redesign proposal that is reviewed and approved by the Strategic Leadership Team which assures that the ideas are aligned with the strategic direction of the school system. Then, the redesign proposal is handed-off to the Site-Improvement Teams within each individual school inside the cluster. The Site-Improvement Teams develop specific action plans to redesign their individual schools in accordance with the redesign proposal.

Phase III: Achieving Stability and Diffusion

In Phase III, educators use special methods to make improvements stable within the K-12 cluster of schools that started Knowledge Work Supervision. Then, steps are taken to spread the redesign process to all other K-12 clusters until the entire school system is redesigned for high-performance.

Phase IV: Sustaining School Improvement

After the entire school system is transformed, Knowledge Work Supervision moves into Phase IV. During this phase, educators make incremental refinements in the new organizational design by applying principles of quality management and continuous improvement. After a predetermined period, Phase IV ends and the process recycles to Phase I. This process of organizational learning and renewal continues for the life of the school system. Knowledge Work Supervision is a never-ending journey toward higher and higher levels of school system performance.

Key Players For Knowledge Work Supervision

Four key players power Knowledge Work Supervision: a district-wide Strategic Leadership Team, a Knowledge Work Coordinator, Cluster Improvement Teams (one for each cluster of schools within the district), and Site-Improvement Teams (one each for each individual school within each cluster). These key players are essential for effective school improvement.

The Strategic Leadership Team

This team provides strategic leadership for school improvement. Members of this group include the superintendent of schools, a building principal from each level of schooling (elementary, middle, and secondary), and a teacher from each level of schooling. Some school districts may opt to include a parent or a student on this team. The membership of this group should not exceed ten people because large work groups are notoriously difficult to manage. The Strategic Leadership Team completes Phase I of Knowledge Work Supervision.

The Knowledge Work Coordinator

This person can be a currently employed administrator, supervisor, or teacher retrained and retooled to serve in this new role; or, this role can be filled by a newly hired professional. He or she receives specialized training in Knowledge Work Supervision, organizational learning, organization redesign, organizational behavior, systems thinking, quality improvement, socio-technical systems design, knowledge work, and organization development. Larger school systems may establish and train a cadre of Knowledge Work Coordinators.

The Knowledge Work Coordinator's role is to provide tactical leadership for school improvement. He or she collaborates with the Knowledge Work Teams to coordinate the overall implementation of redesign proposals throughout the school system. This person assures the timely and effective completion of activities in each of the phases. A critical function of this new role is to establish and maintain communication structures between levels of schooling (elementary, middle, and secondary), among clusters of schools, and between individual schools. This "integrator" function is absolutely essential for maintaining systemic school improvement and is a key element of a knowledge-based organization (Daft, 1997).

Cluster Improvement Teams

Because organizational redesign is complex, attempting to redesign an entire school district at once is inadvisable (and probably impossible). Instead, Knowledge Work Supervision begins with a cluster of interconnected schools (e.g., a high school and all the middle and elementary schools "feeding" into it). This feeder cluster is, in fact, a complete system. As a system, mistakes made in lower grades flow downstream to affect other grades; e.g., if a middle school program is being "dumbed-down," these changes influence the high school program receiving students from that

program. Therefore, trying to improve the high school's performance levels without simultaneously improving the connected middle and elementary schools would be futile.

The Strategic Leadership Team charters and trains a Cluster Improvement Team composed of teachers and administrators from the feeder cluster of schools beginning Knowledge Work Supervision. The Cluster Improvement Team uses Participative Design Workshops to generate creative ideas for redesigning their cluster's knowledge work process, social architecture, and its relationship with the broader school district and environment. This team develops specific proposals for redesigning its cluster and sends them to the Strategic Leadership Team for review and approval.

Site Improvement Teams

Each K-12 feeder-cluster is composed of individual schools. Each school must implement the redesign innovations in a way that makes sense for itself, yet simultaneously assures that the improvements are aligned with the rest of the cluster and with the entire school system. To plan the implementation of the redesign proposal, each school has a Site Improvement Team.

Conclusion

Knowledge Work Supervision looks complex because it is. It must be complex, because school districts are complex systems. This new paradigm offers a systematic way to examine and simultaneously improve three sets of critical variables affecting the overall performance of school districts: work processes, social architecture, and environmental relations. The paradigm also provides a model that views a school district as a system and provides methods to improve all pieces of the system, not just the instructional program or the curriculum.

Knowledge Work Supervision will also respond effectively and simultaneously to individual, group, and organizational needs. If applied consistently and with patience, Knowledge Work

Supervision will move entire school systems continuously toward higher levels of performance through organizational learning. The literature on redesigning organizations using similar models confirms this conclusion (e.g., see Pasmore, 1988, 1992; Senge, 1990b). Further, although practitioners may use Knowledge Work Supervision, their school systems will never perfectly achieve their new visions because those visions are moving targets. Yet, through Phase IV of the paradigm, and because they will repeat the Knowledge Work Supervision cycle for the life of their school system, their systems will move continuously toward those visions. It is their school systems' lifelong journeys of organizational learning and continuous renewal that will raise levels of school system performance. Nothing less will do it!

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Table 1: Design Principle 1 and Design Principle 2

Basic Design Variables ⇩	**Design Principle #1: BUREAUCRATIC DESIGN IN SCHOOL DISTRICTS**	**Design Principle #2: PARTICIPATIVE DESIGN IN SCHOOL DISTRICTS**
Unit of Function	Building block is **one person = one task**, i.e. firm boundaries between grade levels, buildings, specialists and academic disciplines; maximum task breakdown and specification; skills defined in narrow job descriptions; minimal teamwork.	Building block is best application of self-managing **individual and team knowledge work,** i.e. classroom innovation encouraged; "multitasking" and cross-training, when useful; teamwork across grade levels, buildings and academic disciplines.
Organizational Rules	Planning, coordination and control decisions located at levels **above the teachers and other staff.** Leadership defined by set responsibilities and range of control over others. Leaders aim at total specification of responsibilities and authorities of workers.	Planning, coordination and control located, as much as possible, **with the teachers and other staff doing the work.** Leadership defined by ability to creatively support and enhance the work done by teachers and other staff. Leaders provide minimum critical specifications for workers, then encourage self-management by people doing the work.
Compatible Educational Theory and Practices	Narrow-participation strategic planning; rigid career paths; mandated curriculum scope and sequencing; Carnegie Unit (time-based) graduation requirements; grade-level hierarchies; self-contained classrooms; content specialization; inter-school isolation and/or competition; individualistic and competitive learning activities; fixed ability grouping, social stratification.	Inclusive ("Search-type") school-community strategic planning; flexible career paths; flexible and integrated curriculum; "whole-person", as well as knowledge-based, graduation requirements; multi-disciplinary and multi-level teamwork, mix of individual/competitive/cooperative learning activities, student portfolios, integrated curricula, inclusion and mainstreaming
Typical Outcomes:		
Social & Psychological ⇨	Fight or flight mentality, apathy, conspiracies, fear and alienation (Bion, 1959)	Excitement, involvement, creative work and commitment (Emery, 1977)
Innovation and Improvement ⇨	**Problem or program-driven innovation.** Seek quick fix and symptomatic solutions to reduce pressure on the system. Change perceived as threat. Protection of "turf" and status quo rewarded.	**Continuous improvement driven innovation.** Schools seek ideal alignment with community and social needs for seamless K-12 process to produce educated students and productive adults.

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Table 2: Direction of the Proposed Paradigm Shift

PARADIGM ATTRIBUTES	FROM	→	TO
	Traditional Paradigms (Clinical Supervision and its variations; and, supervision-as-performance evaluation)	→	***Knowledge Work Supervision*** ®
UNDERLYING PHILOSOPHY	Changing individual behavior improves the entire organization	→	Changing the entire organization improves individual behavior
FOCUS	On individual behavior	→	On the system's overall functioning
ORGANIZATIONAL UNIT WITHIN WHICH SUPERVISION OCCURS	Within individual schools	→	Within a cluster of inter-connected schools
CORE METHODS	Classroom observation for clinical supervision and performance evaluations	→	Assess and simultaneously improve all of the following: 1. The school system's relationship with its environment. 2. The knowledge work processes: linear work and nonlinear work. 3. The social architecture, including motivation, job satisfaction, skills, and quality of work life. Continually improve all of the above for the life of the organization.
KEY PLAYERS	Building principal Instructional supervisor Peers	→	***Strategic Leadership Team*** providing strategic leadership ***Knowledge Work Coordinator*** providing overall coordination and process management ***Cluster Improvement Teams*** providing tactical leadership with clusters of interconnected schools (e.g., K - 12 feeder clusters) ***Site Improvement Teams*** leading site-based school improvement
VIEW OF TEACHERS	Employees needing to be evaluated; or, colleagues needing assistance	→	Semi-autonomous knowledge workers Stakeholders in the organizational improvement process
WAYS OF IMPROVING INDIVIDUAL PERFORMANCE LEVELS	• Formative/summative evaluation • In-service training • Coaching • Clinical supervision	→	• Formative evaluation • Self-directed in-service training • Coaching • Clinical supervision • Competency Modeling • Performance Technology

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Figure 1: DESIGN PRINCIPLE #1--THE BUREAUCRATIC ORGANIZATION

(BASED ON REDUNDANCY OF PARTS OR PEOPLE)

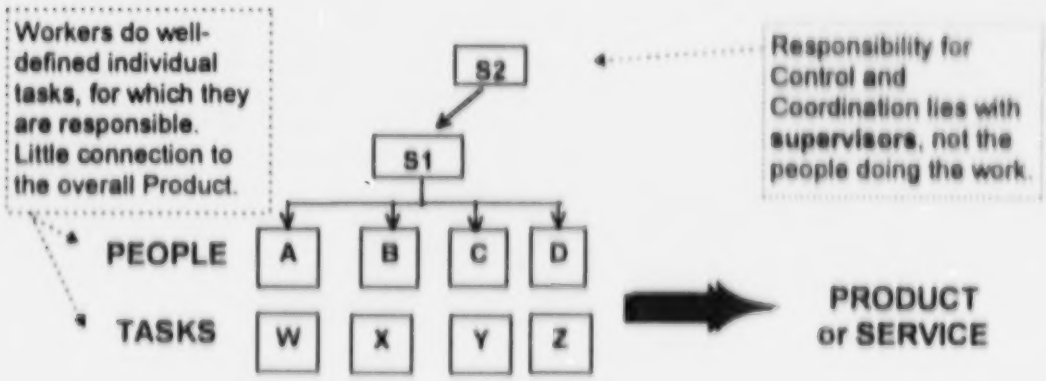


Figure 2: DESIGN PRINCIPLE #2--THE DEMOCRATIC, SELF-MANAGING ORGANIZATION

(BASED ON REDUNDANCY OF FUNCTIONS AND ABILITIES)

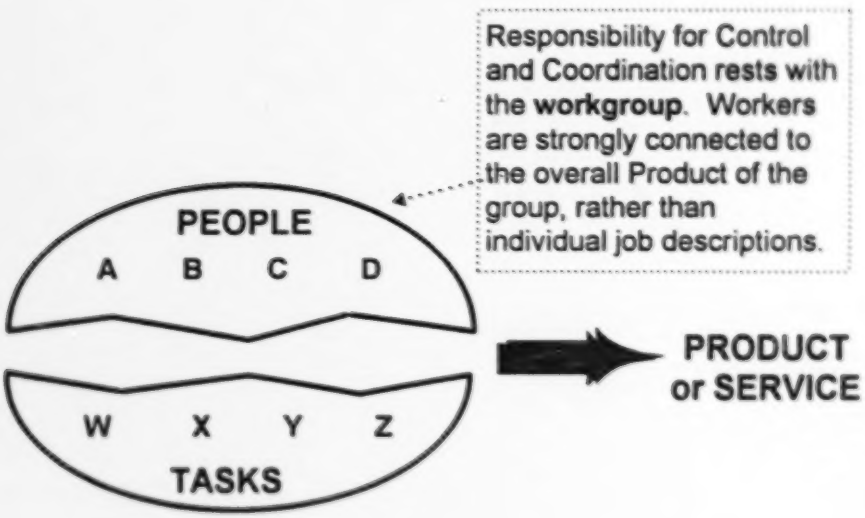
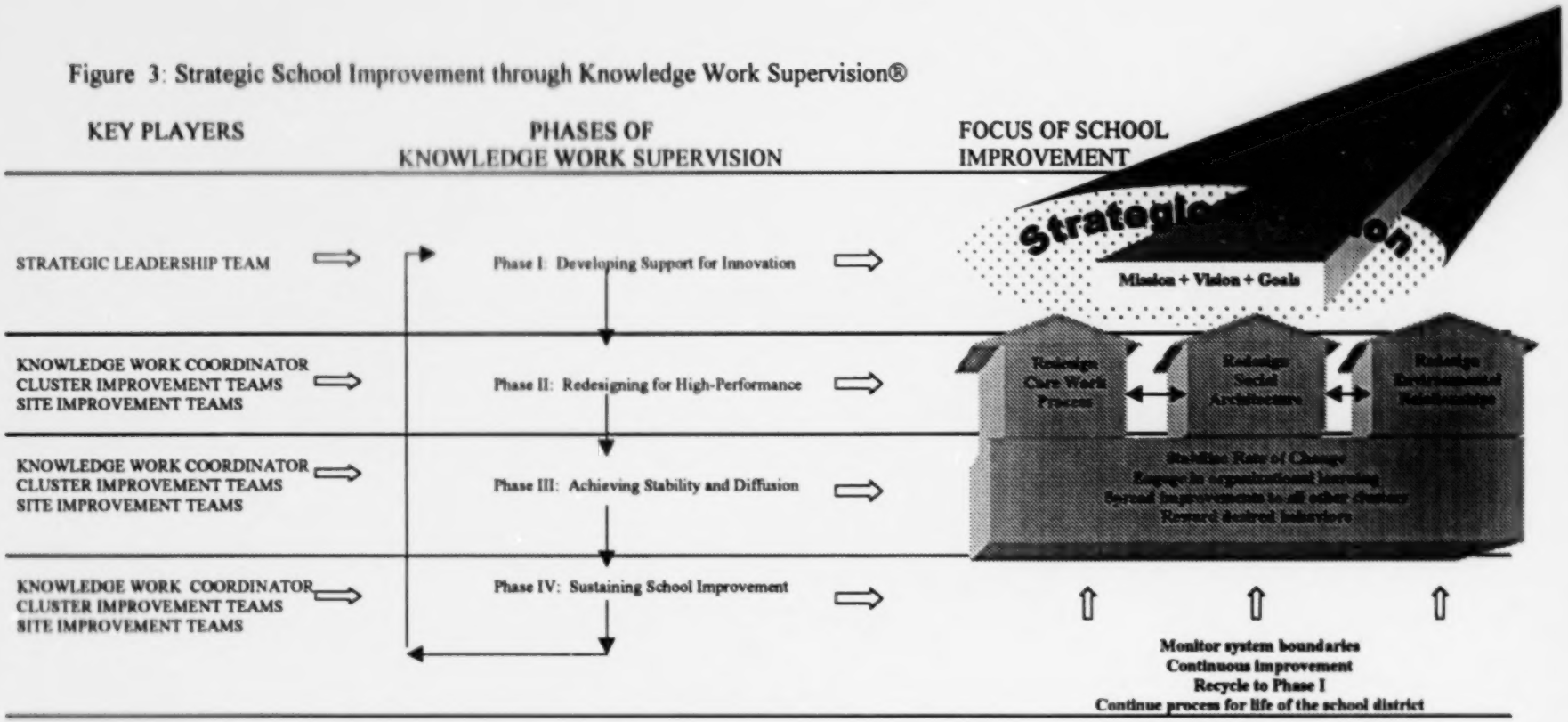

Responsibility for Control and Coordination rests with the workgroup. Workers are strongly connected to the overall Product of the group, rather than individual job descriptions.
PEOPLE
A B C D
W X Y Z
TASKS
PRODUCT or SERVICE

Figure 3: Strategic School Improvement through Knowledge Work Supervision®



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